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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,417	12/05/2003	Todd D. Wakefield	17354.4.1	8374

22913 7590 03/23/2009

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EXAMINER	
CAO, PHUONG THAO	
ART UNIT	PAPER NUMBER
2164	
MAIL DATE	DELIVERY MODE
03/23/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/729,417	WAKEFIELD ET AL.	
	Examiner	Art Unit	
	Phuong-Thao Cao	2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-6,8-10,12,14,17-19 and 21-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4-6, 8-10, 12, 14, 17-19 and 21-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to Amendment/RCE filed on 2/8/2008.

2. Claims 1, 4-6, 8-10, 12, 14, 17-19 and 21-25 have been amended, and claims 2, 3, 7, 11, 13, 15, 16 and 20 were previously cancelled. Currently, claims 1, 4-6, 8-10, 12, 14, 17-19 and 21-25 are pending.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/8/2008 has been entered.

Response to Amendment

4. Amendments to claims are effective to overcome the claim objection, the 101 rejection and the 112, 2nd paragraph rejection in the previous office action. Therefore, the previous claim objection, the previous 101 rejection, and the previous 112, 2nd paragraph rejection have been withdrawn.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 4-6, 8-10, 12, 14 and 17-25 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 4-6, 8-10, 12, 14, 17-19 and 21-25 (effective filing date 12/06/2002) are rejected under 35 U.S.C. 103(a) as being unpatentable over Haug et al. (US Patent No 6,292,771,

issued date 9/18/2001) in view of Riloff et al. ("An Empirical Approach to Conceptual Case Frame Acquisition", In Proceedings of the Sixth Workshop on Very Large Corpora, 1998).

As to claim 1, Haug et al. teaches:

"A computer program product located on one or more storage media devices usable to perform integration of mixed format data" (see Haug et al., [column 5, lines 10-10] storing both structured data (e.g., the type of patient, type of physician) and free-text in database), said computer program product comprising instructions executable by a computer to perform the functions of:

"accessing a database on computer-readable storage media containing data records, at least some data records containing both structured and unstructured data, the unstructured data including free text that has information relatable to the structured data contained in the same data record where the particular free text is found" (see Haug et al., [column 5, lines 28-30] for obtaining free-text from database);

"using linguistic information contained in the free text to extract multi-dimensional relational facts from the free text" (see Haug et al., [column 5, lines 28-30] for parsing the free text to obtain the discrete concepts wherein the discrete concepts contained in the free text are broadly interpreted as multi-dimensional relational facts from the free text as recited);

"producing a set of construed data of said multi-dimensional relational facts, each construed datum relatable to the structured data from the same data record that the free text originated from" (see Haug et al., [column 6, lines 1-7] wherein the interpretive ICD9 code

generated based on the analysis of the discrete concepts extracted from the free text is interpreted as a set of construed data of said multi-dimensional relational facts as recited);

"integrating the produced set of construed data with the structured data on computer-readable storage media" (see Haug et al., [column 5, lines 10-19 and 43-45] for storing an interpretation (i.e., ICD9 code) back to Oracle database which stored both structured data and free text; also see [column 8, lines 57-59]); and

"storing the produced set of construed data in the database" (see Haug et al., [column 8, lines 57-59] for storing the ICD code in database).

However, Haug et al. does not explicitly teach:

"each multi-dimensional relational fact including plurality of attributes concerning the free text from which was extracted, the plurality of attributes including at least syntactic roles, wherein the syntactic roles are used as input to produce thematic roles".

On the other hand, Riloff et al. teaches:

"each multi-dimensional relational fact including plurality of attributes concerning the free text from which is was extracted, the plurality of attributes including at least syntactic roles, wherein the syntactic roles are used as input to produce thematic roles" (see Riloff et al., [page 1, section Motivation] for using case frames to recognize events and role objects in text wherein each event including a plurality of role objects is a multi-dimensional relational fact, each event is represented by thematic roles (conceptual roles) which are generated from their mapping to syntactic roles as equivalent as recited).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the teaching of Riloff et al. into Haug et al.'s system. Skilled

artisan would have been motivated to do so as suggested by Riloff et al., [page 1, column 1, Abstract] that using case frames to recognize and extract facts (events) from the free text are well known and usually applied in conceptual natural language processing systems. In addition, both of the references (Haug et al. and Riloff et al.) teach feature that are directed to analogous art and they are directed to the same field of endeavor, such as, conceptual natural language processing, syntactic parser and semantic analyzer. This close relation between both of the references highly suggests an expectation of success.

As to claim 14, Haug et al. teaches:

"A method for integrating of mixed format data" (see Haug et al., [column 5, lines 10-10] storing both structured data (e.g., the type of patient, type of physician) and free-text in database), comprising the steps of:

"accessing a database having data tuples on computer-readable storage media containing records of mixed structured and unstructured data, the unstructured data including free text that has information relatable to the structured data contained in the data record where the particular free text is found" (see Haug et al., [column 5, lines 28-30] for obtaining free-text from database);

"using linguistic information contained in the free text to extract multi-dimensional relational facts from the free text" (see Haug et al., [column 5, lines 28-30] for parsing the free text to obtain the discrete concepts wherein the discrete concepts contained in the free text are broadly interpreted as multi-dimensional relational facts from the free text as recited);

"producing a set of construed data of said multi-dimensional relational facts, each construed datum relatable to the structured data from the same data record that the free text originated from" (see Haug et al., [column 6, lines 1-7] wherein the interpretive ICD9 code generated based on the analysis of the discrete concepts extracted from the free text is interpreted as a set of construed data of said multi-dimensional relational facts as recited);

"integrating the produced set of construed data with the data tuples of the structured data" (see Haug et al., [column 5, lines 10-19 and 43-45] for storing an interpretation (i.e., ICD9 code) back to Oracle database which stored both structured data and free text; also see [column 8, lines 57-59]); and

"storing the set of construed data in the database" (see Haug et al., [column 8, lines 57-59] for storing the ICD code in database).

However, Haug et al. does not explicitly teach:

"each multi-dimensional relational fact including plurality of attributes concerning the free text, the plurality of attributes including at least syntactic roles of the free text and thematic roles of the free text"; and

"producing a set of construed data of said multi-dimensional relational facts using at least the thematic roles".

On the other hand, Riloff et al. teaches:

"each multi-dimensional relational fact including plurality of attributes concerning the free text, the plurality of attributes including at least syntactic roles of the free text and thematic roles of the free text" (see Riloff et al., [page 1, section Motivation] for using case frames to recognize events and role objects in text wherein each event including a plurality of role objects

is a multi-dimensional relational fact, each event is represented by thematic roles (conceptual roles) which are generated from their mapping to syntactic roles as equivalent as recited);

"producing a set of construed data of said multi-dimensional relational facts using at least the thematic roles" (see Riloff et al., [page 1, column 1] for using thematic roles to recognize events (i.e., facts)).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the teaching of Riloff et al. into Haug et al.'s system. Skilled artisan would have been motivated to do so as suggested by Riloff et al., [page 1, column 1, Abstract] that using case frames to recognize and extract facts (events) from the free text are well known and usually applied in conceptual natural language processing systems. In addition, both of the references (Haug et al. and Riloff et al.) teach feature that are directed to analogous art and they are directed to the same field of endeavor, such as, conceptual natural language processing, syntactic parser and semantic analyzer. This close relation between both of the references highly suggests an expectation of success.

As to claims 4 and 17, these claims are rejected based on arguments given above for rejected claims 1 and 14 respectively, and are similarly rejected including the following:

Haug et al. and Riloff et al. teach:

"applying caseframes in extracting relational facts from the free text" (see Riloff et al., page 5, column 2).

As to claims 5 and 18, these claims are rejected based on arguments given above for rejected claims 1 and 14 respectively, and are similarly rejected including the following:

Haug et al. and Riloff et al. teach:

"producing a new database containing the integrated set of construed data" (see Haug et al., [column 6, lines 4-7] wherein the list of patient admissions can be broadly interpreted as a new database).

As to claims 6 and 19, these claims are rejected based on arguments given above for rejected claims 1 and 14 respectively, and are similarly rejected including the following:

Haug et al. and Riloff et al. teach:

"inserting the produced data into the database of structured data while performing said integrating step" (see Haug et al., [column 8, line 57-59]).

As to claim 8, this claim is rejected based on arguments given above for rejected claim 1 and is similarly rejected including the following:

Haug et al. and Riloff et al. teach:

"produce a new relational database containing the integrated data produced by said integrating" (see Haug et al., [column 6, lines 1-8] for producing a list storing integrated data (patient ID, free-text and ICD9 code) wherein the list or HELP system can be interpreted as new relational data as recited).

As to claim 9, this claim is rejected based on arguments given above for rejected claim 1 and is similarly rejected including the following:

Haug et al. and Riloff et al. teach:

"produce a file containing the integrated data" (see Haug et al., [column 6, lines 1-8] for producing a list storing integrated data (patient ID, free-text and ICD9 code), wherein the list or the HELP system can be interpreted as a file as recited).

As to claims 10 and 23, these claims are rejected based on arguments given above for rejected claims 9 and 22 respectively, and are similarly rejected including the following:

Haug et al. and Riloff et al. teach:

"produce a file having a format selected from the group of XML, character separated values, spreadsheet formats and file-based database structure" (see Haug et al., [column 6, lines 1-8] for producing a list storing integrated data (patient ID, free-text and ICD9 code)).

As to claims 12 and 24, these claims are rejected based on arguments given above for rejected claims 1 and 14 respectively, and are similarly rejected including the following:

Haug et al. and Riloff et al. teach:

"wherein the integrated data including reference information to the original free text for construed data" (see Haug et al., [column 6, lines 1-2] wherein patient id is interpreted as a reference to the patient record containing the original free text in the database on data storage device 103 (see [column 5, lines 10-16])).

As to claim 21, this claim is rejected based on arguments given above for rejected claim 18 and is similarly rejected including the following:

Haug et al. and Riloff et al. teach:

"wherein the new database is a relational database" (see Haug et al., [column 6, line 1-3] wherein HELP database must be a relational database since data are stored as records).

As to claim 22, this claim is rejected based on arguments given above for rejected claim 18 and is similarly rejected including the following:

Haug et al. and Riloff et al. teach:

"wherein the new database includes at least one file containing the integrated data" (see Haug et al., [column 6, line 1-8] wherein a record stored Patient id and ICD9 code in the HELP system can be interpreted as a file containing the integrated data as recited).

As to claim 25, Haug et al. teaches:

"A method for integrating structured data with unstructured data that includes free text" (see Haug et al., [column 5, lines 10-17]), the method comprising:

"accessing a database on computer-readable storage media containing data records of mixed structured and unstructured data, the unstructured data including free text that has information relatable to the structured data" (see Haug et al., [column 5, lines 28-30] for obtaining free-text from database);

"using linguistic information contained in the free text to extract multi-dimensional relational facts from the free text, the relational facts relating to the structured data" (see Haug et

al., [column 5, lines 28-30] for parsing the free text to obtain the discrete concepts wherein the discrete concepts contained in the free text are broadly interpreted as multi-dimensional relational facts from the free text as recited);

"producing a set of construed data of said multi-dimensional relational facts" (see Haug et al., [column 6, lines 1-7] wherein the interpretive ICD9 code generated based on the analysis of the discrete concepts extracted from the free text is interpreted as a set of construed data of said multi-dimensional relational facts as recited), and

"integrating the produced data with the structured data and storing the integrated construed data and structured data on computer readable storage media" (see Haug et al., [column 5, lines 10-19 and 43-45] for storing an interpretation (i.e., ICD9 code) back to Oracle database which stored both structured data and free text; also see [column 8, lines 57-59]); and

"storing the produced set of construed data in the database" (see Haug et al., [column 8, lines 57-59] for storing the ICD code in database).

However, Haug et al. does not explicitly teach:

"the relational facts including at least thematic roles".

On the other hand, Riloff et al. teaches:

"the relational facts including at least thematic roles" (see Riloff et al., [page 1, section Motivation] for using case frames to recognize events and role objects in text wherein each event including a plurality of role objects is a multi-dimensional relational fact, each event is associated with thematic roles).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the teaching of Riloff et al. into Haug et al.'s system. Skilled

artisan would have been motivated to do so as suggested by Riloff et al., [page 1, column 1, Abstract] that using case frames with thematic roles to recognize and extract facts (events) from the free text are well known and usually applied in conceptual natural language processing systems. In addition, both of the references (Haug et al. and Riloff et al.) teach feature that are directed to analogous art and they are directed to the same field of endeavor, such as, conceptual natural language processing, syntactic parser and semantic analyzer. This close relation between both of the references highly suggests an expectation of success.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong-Thao Cao whose telephone number is (571)272-2735. The examiner can normally be reached on 8:30 AM - 5:00 PM (Mon - Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hung T Vy/
Primary Examiner, Art Unit 2163

Phuong-Thao Cao, Examiner
Art Unit 2164
March 4, 2009